

condition is detected to change rapidly and transmitting packet data later to a communication partner whose transmission path condition is detected to change slowly.

Although not stated expressly, the Final Rejection implies that Stolyar discloses a weighted parameter $c_i(t)$ that indicates whether the fading effects of a channel occur fast or slow (see Final Rejection section 1, lines 10-12, 14-17). Based on this implication, the Final Rejection proposes that Stolyar discloses applying weighted parameter $c_i(t)$ so as to transmit packet data earlier to a communication partner whose transmission path condition changes rapidly and transmit packet data later to a communication partner whose transmission path condition changes slowly (see section 1, lines 14-17 and 20-22).

However, weighted parameter $c_i(t)$ does not indicate whether the fading effect of a channel occurs fast or slow. Instead, weighted parameter $c_i(t)$ expresses a set, $\{c_1, c_2, c_3, \dots, c_j\}$, of transmission powers, per unit data rate, required to transmit data to a base station at a particular scheduling interval, t (see Stolyar col. 1, lines 55-59). Thus, for the scheduling intervals indicated by $t=t_1$, $t=t_2$, and $t=t_3$, three sets of weighted parameters $c_i(t)$ exist, which are $\{c_1(t_1), c_2(t_1), c_3(t_1), \dots, c_j(t_1)\}$, $\{c_1(t_2), c_2(t_2), c_3(t_2), \dots, c_j(t_2)\}$, and $\{c_1(t_3), c_2(t_3), c_3(t_3), \dots, c_j(t_3)\}$.

Accordingly, the Final Rejection's proposal that Stolyar identifies something substantively different with $c_i(t)$ than is intended by c_i is mistaken (see Final Rejection section 1, lines 6-11 and 14-17). Stolyar's parameter $c_i(t)$ differs from c_i only in that $c_i(t)$ expressly indicates that a set of c_i exists for each scheduling interval t , $t = t_1, t_2, t_3, \dots, t_n$ (see Stolyar col. 6, lines 36-38). As disclosed by Stolyar, creating a set of c_i for every one of a plurality of short scheduling intervals t ($t \in \{t_1, t_2, t_3, \dots, t_n\}$) makes it possible to treat the set of c_i as constants for each scheduling interval, without introducing excessive error (see col. 4, lines 47-52).

Moreover, Stolyar expressly states that $c_i(t)$ and c_i refer to the exact same thing, though the explicit time-dependence is omitted occasionally to simplify the notation (see col. 6, lines 36-38). Thus, the Final Rejection's proposal that Stolyar attributes two different meanings to $c_i(t)$ and c_i is unfounded (see Final Rejection section 1, lines 6-11 and 14-17).

In summary, Stolyar's weighted parameter $c_i(t)$ identifies, for each scheduling interval t , the set of weights expressing the transmission power required per unit data to transmit data to a mobile station. Stolyar's weighted parameter $c_i(t)$ does not indicate whether a propagation channel experiences fast or slow fading characteristics. Thus, it necessarily follows that

Stolyar cannot disclose applying weighted parameter $c_i(t)$ so as to determine a packet data transmission order for transmitting packet data earlier to a communication partner whose transmission path condition is changing rapidly and transmitting packet data later to a communication partner whose transmission path condition is changing slowly. And Mandyam is not cited for supplementing the teachings of Stolyar in this regard.

Accordingly, the Applicants submit that the teachings of Stolyar and Mandyam, considered individually or in combination, do not render obvious the subject matter defined by claim 1. Independent claim 11 similarly recites the above-mentioned feature distinguishing apparatus claim 1 from the applied references, but with respect to a method. Therefore, the rejections applied to claims 9 and 10 are obviated and allowance of claims 1 and 11 and all claims dependent therefrom is warranted.

To promote a better understanding of the differences between the claimed subject matter and the applied references, the Applicants submit the following additional remarks.

Features of the claimed invention include employing a configuration for detecting changes in transmission path conditions and determining a packet data transmission order for transmitting packet data earlier to a communication partner whose

transmission path condition is detected to change rapidly and transmitting packet data later to a communication partner whose transmission path condition is detected to change slowly, based on the changes in transmission path conditions.

As stated in the Response to Arguments section of the Final Rejection, the background art of Stolyar discloses a largest weighted delay first (LWDF) scheduling discipline. Stolyar discloses calculating the weight C_i according to channel conditions (Stolyar col. 4, lines 38-64). That is, Stolyar's LWDF scheduling discipline is directed to comparing channel conditions, transmitting data first to a mobile station of a good channel condition and transmitting data later to a mobile station of a poor channel condition. Therefore, Stolyar is different from the claimed invention which compares transmission path conditions, transmits data earlier to a communication partner whose transmission path condition changes rapidly and transmitting packet data later to a communication partner whose transmission path condition changes slowly.

Moreover, Stolyar's background art discloses that the LWDF scheduling discipline generally provides the best results when channel conditions are constant and that a need has remained for a scheduling discipline that will dependably provide queue

stability, because in many cases there are significant fluctuations in the channel conditions.

Further, Stolyar discloses a scheduling discipline called modified largest weighted delay first (M-LWDF) that provides an advantage of providing favorable QoS by applying M-LWDF, when any of the disciplines can generate a stable queue of a given traffic pattern regarding a received packet, even under changing transmission path conditions.

However, Stolyar merely discloses calculating the weights C_i from channel conditions, a relationship between the scheduling interval and fading, and fast and slow fading (see col. 4, lines 38-64). Therefore, Stolyar does not disclose the above-noted feature of the claimed invention of transmitting packet data earlier to a communication partner whose transmission path condition changes rapidly and transmitting packet data later to a communication partner whose transmission path condition changes slowly.

Typically, "channel quality" is defined by received power or signal to noise ratio (SNR) and the like, and is totally a different concept from "speed of change of transmission path conditions." This definition is well known to one skilled in the art.

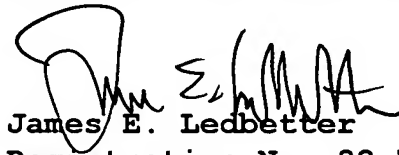
Thus, Applicants disagree with the interpretation of Stolyar proposed in the Final Rejection. And Mandyam does not disclose the above-noted feature of the claimed invention.

Accordingly, Applicants respectfully submit that the claimed invention is non-obvious over the cited references and is in condition for allowance.

In view of the above, it is submitted that this application is in condition for allowance and a notice to that effect is respectfully solicited.

If any issues remain which may best be resolved through a telephone communication, the Examiner is requested to telephone the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,



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Date: January 7, 2008
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